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Global Competitive Streamlining ESS for the 1990s (Executive Panel Discussion, 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, November, 1990, Baltimore, Maryland), *H. Caruso, G. Anderson, B. Trakas, R. Hutchinson, F. DiGiovanni,* and *G. Wooley,* No. 3, p. 35.

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AUTHOR INDEX

A

Andersen, S.O., Global Impact of the CFC Phaseout, No. 3, p. 17. *This paper reviews the present status of the CFC issue and focuses on its global impact on the electronics industry.* (CC Cleanroom Operation/ Procedures, Criteria and Standards; EE Air Quality, Environmental Planning/Management)

Anderson, G., Global Competitive Streamlining ESS for the 1990s, (Executive Panel Discussion on ESS), 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, Baltimore, Maryland, November, 1990, No. 3, p. 35. (Abstract—see *Caruso, H.J.*)

B

Barney, R.D., Contamination Control Program for the Cosmic Background Explorer, No. 2, p. 34. *This paper describes the cosmic background explorer contamination control program and the difficulties experienced in maintaining the cleanliness quality of personnel and flight hardware throughout instrument assembly, spacecraft integration, flight environmental qualification, and launch-site operations.* (CC Cleanroom Operation/Procedures, Sources and Effects; DTE Solar and Space Simulation)

Bocchi, W.J., Computer-Aided Reliability Finite Element Methods No. 5, p. 46, (Abstract—see *Followell, D.*)

C

Carbonell, R.G., The Deposition of Contaminants from Deionized Water onto Hydrophobic Silicon Wafers, No. 6, p. 28. (Abstract—see *Riley, D.J.*)

Caruso, H.J., Background Rationale for Tailoring Airborne External Stores Vibration Tests in MIL-STD-810, Method 514 or Myths and Sacred Cows in the Environmental Sciences Revisited, No. 5, p. 41. *This paper identifies background rationale currently missing from Method 514 (Vibration) of MIL-STD-810C/D/E for vibration testing of external stores and associated equipment carried on jet aircraft (Categories 7A and 7B).* (DTE Criteria and Standards, Shock and Vibration, Test Tailoring)

Caruso, H.J., Global Competitive Streamlining ESS for the 1990s, (Executive Panel Discussion on ESS), 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, Baltimore, Maryland, November, 1990, No. 3, p. 35. *Questions considered by the panelists included: What ESS do they apply to their products? How well does ESS work for them? Does the current contractual language provide the needed flexibility to make ESS a viable practice? How can ESS and TQM work together to lower business costs and keep their organizations competitive?* (DTE Test Tailoring; PR Acquisition Policies, Stress Screening)

Caruso, H.J., Reliability and Environmental Standards and Management Issues (Panel Discussion), 36th Annual Technical Meeting, Institute of Environmental Sciences, New Orleans, Louisiana, 1990, No. 1, p. 37. *The initiatives and opportunities that are opening up in the environmental engineering field were reviewed.The focus was MIL-STD-810 and MIL-STD-781.* (DTE Criteria and Standards, Test Tailoring; PR Acquisition Policies, Criteria and Standards)

Connon, W.H., III Comments on Kurtosis of Military Vehicle Vibration Data, No. 6, p. 38. *This paper describes road vibration tests conducted on a series of shelters on dolly sets and prototype trucks at the U.S. Army Combat Systems Test Activity (USACSTA) at Aberdeen Proving Ground.* (CA Environmental Modelling, Analysis; DTE Shock and Vibration, Test Tailoring)

Cooper, D.W., Comparing Three Environmental Particle Size Distributions: Power Law (FED-STD-209D), Lognormal, Approximate Lognormal (MIL-STD-1246B), No. 1, p. 21. *The behavior of particles is strongly related to particle size. To summarize data or to set specifications, it is useful to use a particle size distribution function. The choice of which distribution function to use depends not only on the data from which it is derived but also on its ease of use and intelligibility. Such questions have risen in connection with the particle size distributions in FED-STD-209D and MIL-STD-1246B. This paper describes three particle size distributions and some relationships among them.* (CC Criteria and Standards, Identification, Measurement, and Monitoring)

Costello, Dr. R.B., The Challenge to Change (Keynote Address), The 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, Baltimore, Maryland, November, 1990), No. 1, p. 32. *The impact of science and technology on the American economy, especially innovative methods of enhancing America's industrial base to improve economic performance, is addressed.* (PR Acquisition Policies)

D

DePinto, G., Minimizing Defects for a Silicon Nitride Deposition Process, No. 4, p. 26. (Abstract—see *Wilson, J.*)

DiGiovanni, F., Global Competitive Streamlining ESS for the 1990s (Executive Panel Discussion on ESS), 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, Baltimore, Maryland, November, 1990. (Abstract—see *Caruso, H.J.*)

Durant, D.Q., The Delta Star Thermal Vacuum Test: A Unique Approach to Space Thermal Simulation, No. 6, p. 17. *Several techniques were developed to perform a thermal vacuum test of the Delta Star Spacecraft. Test requirements, methodology, anomalies, test data correlation, and flight data correlation are presented.* (CA Environmental Modelling/Analysis; DTE Solar and Space Simulation, Test Tailoring)

E

Egbert, H., Reliability and Environmental Standards and Management Issues (Panel Discussion), 36th Annual Technical Meeting, Institute of Environmental Sciences, New Orleans, Louisiana, 1990, No. 1, p. 37. (Abstract—see *Caruso, H. J.*)

F

Followell, D., Computer-Aided Reliability Finite Element Methods, No. 5, p. 46. *Finite element analyses (FEA), a process for assessing stresses and strains in electronic equipment in order to compute the expected structural life, is discussed. Efforts to simplify the analyses and provide consistent, accurate results as well as the use of linear FEAs versus nonlinear FEAs are also discussed.* (CA Environmental Modelling/Analysis; DTE Shock and Vibration; PR Stress Screening)

Frith, C.F., Point-of-Use Monitoring for Ultrapure Water Applications in the Semiconductor Industry, No. 3, p. 30. *This paper documents the most recent data for ultrapure water measurement at the point-of-use, including the rinsing process.* (CC Cleanroom Operation/Procedures, Criteria and Standards, Identification, Measurement and Monitoring)

Fuld, C.J., The Delta Star Thermal Vacuum Test: A Unique Approach to Space Thermal Simulation (Abstract—see *Durant, D.Q.*), No. 6, p. 17.

G

Greene, K., Reliability and Environmental Standards and Management Issues (Panel Discussion), 36th Annual Technical Meeting, Institute of Environmental Sciences, New Orleans, Louisiana, 1990, No. 1, p. 37. (Abstract—see *Caruso, H. J.*)

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Hancock, R., Reliability and Environmental Standards and Management Issues (Panel Discusssion), 36th Annual Technical Meeting, Institute of Environmental Sciences, New Orleans, Louisiana, 1990, No. 1, p. 37. (Abstract—see *Caruso, H. J.*)

Howard, J., CFC Alternative Cleaning Systems—Alternative Processing Techniques and Their Effectiveness in Precision Cleaning, No. 5, p. 34. (Abstract—see *Marts, K.*)

Hutchinson, R., Global Competitive Streamlining ESS for the 1990s, (Executive Panel Discussion on ESS), 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, Baltimore, Maryland, November, 1990, No. 3, p. 35. (Abstract—see *Caruso, H.J.*)

L

Liguore, S.L., Computer-Aided Reliability Finite Element Methods, No. 5, p. 46. (Abstract—see *Followell, D.*)

Lipp, L.J., Part I. Design Considerations of Expander Heads for Vibration Systems, No. 2, p. 45. *Natural Frequency Equations for Square, Constant Thickness Expander Heads are included.* (DTE Shock and Vibration)

Lipp, L.J., Part II. Design Considerations of Expander Heads for Vibration Testing. No. 3, p. 23. *Damping Equations for Square, Constant Thickness Expander Heads are included.* (DTE Shock and Vibration)

Lipp, L.J. Part III. Design Considerations of Expander Heads for Vibration Testing, No. 4, p. 39. *The Inverted Truncated Pyramid Expanding Head is discussed.* (DTE Shock and Vibration)

Liu, B.Y.H., Supply Plenum and Airflow Uniformity in Cleanrooms, No. 2, p. 56. (Abstract—see *Sadjadi, R.S.M.*)

M

Marts, K., CFC Alternative Cleaning Systems—Alternative Processing Techniques and Their Effectiveness in Precision Cleaning, No. 5, p. 34. *A multidisciplined product team assessed the feasibility of various cleaning materials and processing equipment for precision cleaning.* (CC Cleanroom Design/Materials, Cleanroom Operation/Procedures)

Mattina, C.F., Assessing Wiping Materials for Their Potential to Contribute Particles to Clean Environments: Constructing the Stress-Strain Curves, No. 5, p. 21. *This paper describes an experimental procedure for stressing wipers such that the magnitude of the stresses are known, reproducible, and applied over a reasonable range, and such that that the number of particles generated thereby is easily determined.* (CC Cleanroom Design/Materials, Sources and Effects)

Milam, L.J., Test Requirements for the Thermal Vacuum Thermal Balance Test of the Cosmic Background Explorer Observatory, No. 2, p. 27. *The cosmic background observatory (COBE) underwent a thermal vacuum/thermal balance test in the space environment simulator at the Space Simulation Test Laboratory, Goddard Space Flight Center. The test requirements, test setup, special fixturing requirements, related contamination concerns, and the test and test results are described.* (CC Identification, Measurement, and Monitoring; DTE Solar and Space Simulation)

N

Nagarajan, R., Process Contamination Checklist: A Diagnostic and Troubleshooting Tool, No. 3, p. 45. A *vendor process contamination checklist to assist the responsible engineer in identifying potential sources of contamination within the vendor process is discussed.* (CC Cleanroom Operation/Procedures, Identification, Measurement, and Monitoring, Sources and Effects)

Nagle, A.L., Cost-Effectiveness of Environmental Stress Screening (ESS): A Case History, No. 6, p. 35. *This paper describes a low-budget ESS program performed on 20 newly manufactured circuit cards.* (DTE Climatics and Thermal, Shock and Vibration; PR Stress Screening)

P

Paley, S.J., Assessing Wiping Materials for Their Potential to Contribute Particles to Clean Environments: Constructing the Stress-Strain Curves, No. 6, p. 21. (Abstract—see *Mattina, C.F.*)

Patterson, D.O., Saying Is One Thing, Doing is Another!, No. 1, p. 17. *The origins of the DoD templates and their relationship to the industrial processes associated with material acquisition are reviewed.* (PR Acquisition Policies)

Perez, R., Computer-Aided Reliability Finite Element Methods , No. 5, p. 46. (Abstract—see *Followell, D.*)

R

Rice, J., Combined Environments Facility for Externally Carried Aircraft Stores, No. 5, p. 29. *A recently completed facility at Raytheon Company that simulates the environments measured on the AN/ALQ-184 EW Jammer Pod during a series of flight tests is described.* (DTE Acoustics, Criteria and Standards, Climatics and Thermal, Shock and Vibration, Test Tailoring)

Riley, D.J., The Deposition of Contaminants from Deionized Water onto Hydrophobic Silicon Wafers, No. 6, p. 28. *This paper describes an investigation of liquid-based deposition of particles onto hydrophobic silicon surfaces by exposing hydrophobic silicon wafers to sample contaminants in a stirred deionized water bath.* (CC Identification, Measurement, and Monitoring, Sources and Effects)

Roberts, J.C., Random Vibration Analysis of a Printed Wiring Board with Electronic Components, No. 1, p. 25. *A printed wiring board with electronic components was modelled using the finite element technique and compared with the same printed wiring board experimentally tested in a chassis during a two-hour random vibration test.* (CA Environmental Modelling/Analysis; DTE Shock and Vibration; PR Stress Screening)

S

Sadjadi, R.S.M., Supply Plenum and Airflow Uniformity in Cleanrooms, No. 2, p. 56. *The effect of plenum geometry on airflow uniformity in the cleanroom is discussed. A realistic numerical approach to the problem of flow distribution in cleanrooms is described.* (CA Environmental Modelling/Analysis; CC Cleanroom Design/Materials, Identification, Measurement, and Monitoring)

Schmidt, R.E., Development of a Reliability Test Profile for an ECM Pod Based on Measured Flight Conditions, No. 4, p. 17. *The profile combined air and liquid temperature cycling and various vibroacoustic levels to duplicate the measured inflight thermal vibratory response of the ALQ-184 ECM pod.* (DTE Climatics and Thermal, Shock and Vibration, Test Tailoring; PR Reliability Growth)

Sellers, R.L., The Evaluation of Alternatives to Ozone-Depleting Chlorofluorocarbons, No. 4, p. 33. *As part of an international effort to reduce the depletion of stratospheric ozone, a test program was developed and implemented to evaluate materials or processes as alternatives to chlorofluorocarbons. The development and the results of these industry-government efforts are described.* (CC Cleanroom Operation/Procedures; EE Air Quality, Environmental Planning/Management)

Stillo, D.M., Random Vibration Analysis of a Printed Wiring Board with Electronic Components, No. 1 p. 25. (Abstract—see *Roberts, J.C.*)

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Tanner, S., Reliability and Environmental Standards and Management Issues (Panel Discussion), 36th Annual Technical Meeting, Institute of Environmental Sciences, New Orleans, Louisiana, 1990, No. 1, p. 37. (Abstract—see *Caruso, H. J.*)

Trakas, R., Global Competitive Streamlining ESS for the 1990s, (Executive Panel Discussion on ESS), 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, Baltimore, Maryland, November, 1990, No. 3, p. 35. (Abstract—see *Caruso, H.J.*)

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Wafford, J., Reliability and Environmental Standards and Management Issues (Panel Discussion), 36th Annual Technical Meeting, Institute of Environmental Sciences, New Orleans, Louisiana, 1990, No. 1, p. 37. (Abstract—see *Caruso, H.J.*)

Wilson, J., Minimizing Defects for a Silicon Nitride Deposition Process, No. 4, p. 26. *A low-pressure chemical vapor deposition nitride process characterized for film uniformity and particle density is described.* (CC Identification, Measurement, and Monitoring, Sources and Effects)

Wooley, G., Global Competitive Streamlining ESS for the 1990s, (Executive Panel Discussion on ESS), 6th IES National Conference and Workshop on Environmental Stress Screening of Electronic Hardware, Baltimore, Maryland, November, 1990, No. 3, p. 35. (Abstract—see *Caruso, H.J.*)

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Yates, W.D., III, Computer-Aided Reliability Finite Element Methods, No. 5, p. 46. (Abstract—see *Followell, D.*)